Panasonic

# INSTALLATION MANUAL

# OUTDOOR UNIT MULTI CONNECTION PIPING KIT

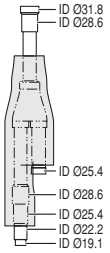
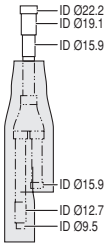
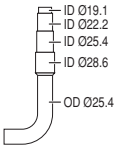
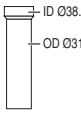
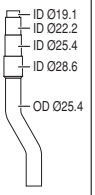
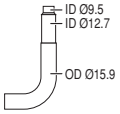
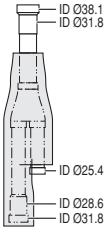
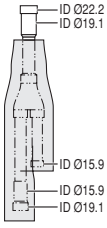
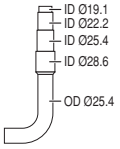
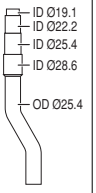
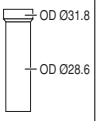
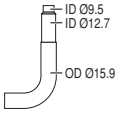
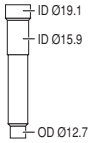
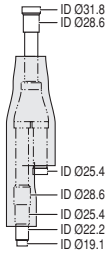
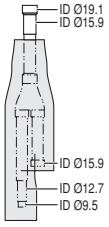
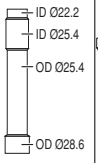
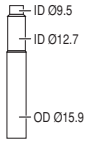
**CZ-32PJ2PQ**
**CZ-48PJ2PQ**

IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY PANASONIC WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR PANASONIC DEALER FOR ADVICE AND INFORMATION.

## This kit includes the following parts

**Table 1**

| Kit name | Shape | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gas side joint | Liquid side joint | Reducer for gas pipe | | | | | | | | | Reducer for liquid pipe | | Insulation | |
| | | | | | | | | | | | | | | Gas | Liquid |
| CZ-32PJ2PQ |  1x |  1x | (1)  1x | (2)  1x | (3)  1x | — | | | (7) 1x | (1)  1x | — | 1x | 1x |
| CZ-48PJ2PQ | (1)  1x | (1)  1x | (1)  2x | — | (3)  1x | (4) 1x | (5)  1x | (7) 3x | (1)  2x | (2)  1x | 2x | 2x |
| | (2)  1x | (2)  1x | | | | | (6)  1x | (8) 1x | | (3)  1x | | |

**NOTE**

- Do not throw away any of the accessories until installation is completed.
- Be sure to read this manual before installation and follow the instructions carefully when performing installation.
- For installation of the outdoor units, refer to the installation manual of the outdoor unit.
- The installation of refrigerant pipes between outdoor and indoor units needs to be arranged by refnet joints and refnet headers, and is to be purchased separately.
- For combination of outdoor units follow Engineering Data.

## Field supply parts

**Table 2**

| Parts | Quantity | Selection procedure |
|---|---|---|
| Insulation for pipes | 1 set | For CZ-32<br>See table "4 Main pipe" on page 2<br>For CZ-48<br>See table "11 Main pipe" on page 7 |
| Connection pipes | | |
| Joint (for gas pipe) (angle of 90°) | 1x | The joint size must be the same as the gas pipe size of the outermost outdoor unit. Refer to “Pipe size selection and cutting position of the joint” on page 2 and page 7. |
| Tape | 1 set | For insulation. |

## Selection procedure

**Table 3**

| Number of outdoor units | Kit name |
|---|---|
| 2 units | CZ-32PJ2PQ |
| 3 units | CZ-48PJ2PQ |

- The quantity and selection procedure for use of joints with an angle of 90° only apply to front or bottom connection installations.
- For lower front connection installations, the quantity and selection procedure are different. Please refer to the dedicated instructions.
- Joints for pipes with the same diameter are only needed for bottom connection installations. See dedicated instructions for quantities and specifications.

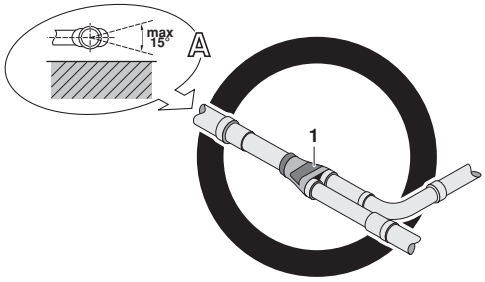
- Use piping with temper grade in function of the pipe diameter as listed in the table below.
- The pipe thickness of the refrigerant piping must comply with relevant local and national regulations. The minimum pipe thickness for R-410A piping must be in accordance with the table below (for design pressure of 4.0 MPa (40 bar)).

| | Temper grade | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O type | | | | 1/2H type | | | | | | | |
| Pipe Ø | 6.4 | 9.5 | 12.7 | 15.9 | 19.1 | 22.2 | 25.4 | 28.6 | 31.8 | 34.9 | 38.1 | 41.3 |
| Minimum thickness t (mm) | 0.80 | 0.80 | 0.80 | 0.99 | 0.80 | 0.80 | 0.88 | 0.99 | 1.10 | 1.21 | 1.32 | 1.43 |

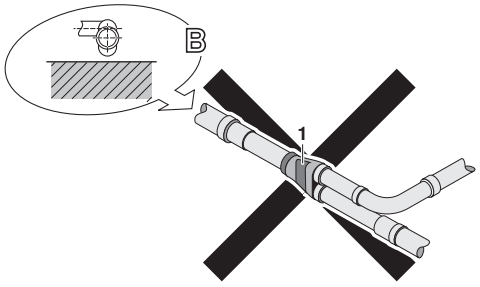
O = Annealed
1/2H = Half hard

## RESTRICTIONS ON INSTALLING THE MULTI CONNECTION PIPING KIT

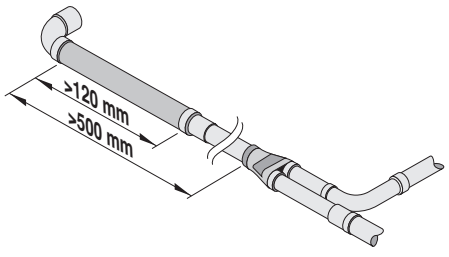
- Install the joints horizontally, so that the caution label (1) attached to the joint comes to the top.
  Do not tilt the joint more than 15° (see view Ⓐ).




Do not install the joint vertically (see view Ⓑ).

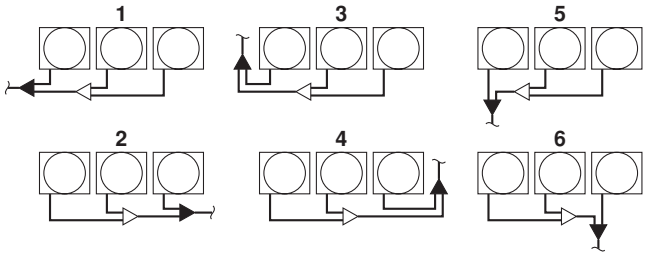



- Make sure that the total length of the piping connected to the joint is absolute straight for more than 500 mm. Only if a straight field piping of more than 120 mm is connected, more than 500 mm of straight section can be ensured.

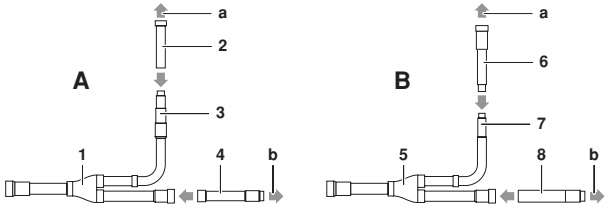



- Improper installation may lead to malfunction of the outdoor unit.

## INSTALLATION EXAMPLES




- Make sure to follow the installation restrictions and carry out installation taking the field requirements into consideration.
- For installations with 3 units like installation examples 5 and 6, the gas side reducers (5) + (6) and the liquid side reducers (2) + (3) may in some cases be connected to the first joint ( ◀ ).




| | | | |
|---|---|---|---|
| **A** | First joint gas side | **5** | Liquid side joint (1) |
| **B** | First joint liquid side | **6** | Liquid side reducer (2) |
| **1** | Gas side joint (1) | **7** | Liquid side reducer (1) |
| **2** | Gas side reducer (5) | **8** | Liquid side reducer (3) |
| **3** | Gas side reducer (1) | **a** | ... to second joint |
| **4** | Gas side reducer (6) | **b** | ... to outdoor unit |

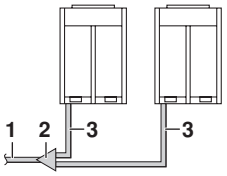
- In this manual only installation example number 1 is used to explain the front connection.

# FOR CZ-32PJ2PQ

Refer to the installation manual of the outdoor unit for selection and restrictions for the piping between outdoor branches. Not observing restrictions on the interconnecting piping may result in malfunctioning of the unit.

**Pipe size selection and cutting position of the joint.**

Select the correct pipe size according the tables below and cut the joints and reducers on the correct cutting point with a pipe cutter.




| | |
|---|---|
| **1** | Main pipe |
| **2** | Outdoor unit multi connection piping kit |
| **3** | Pipe between the outdoor unit multi connection piping kit and the outdoor unit |

**Table 4 Main pipe**

- Select the pipe size in function of the total capacity of the outdoor unit.

| Total capacity of outdoor units | Pipe size[(a)] | |
|---|---|---|
| | Gas | Liquid |
| 18~22 Hp | Ø28.6x0.99 (1/2H) | Ø15.9x0.99 (O) |
| 24 Hp | Ø34.9x1.21 (1/2H) | Ø15.9x0.99 (O) |
| 26~32 Hp | Ø34.9x1.21 (1/2H) | Ø19.1x0.80 (1/2H) |

(a) OD x minimum wall thicknes (temper grade type)

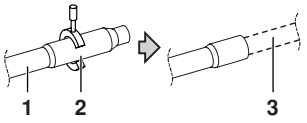
- When upsizing the main pipe, use gas side reducer (2).
- When using pipes of Ø19.1 or larger, make sure to use pipes with 1/2H temper grade. In case there is no alternative and you use the O temper grade for pipes with Ø19.1, a minimal pipe thickness of 1.2 mm or more is required and connections need to be brazed.

**Table 5 Pipe between the outdoor unit multi connection piping kit and the outdoor unit**

| | Pipe size[a] | |
|---|---|---|
| Outdoor unit | Gas | Liquid |
| 8 Hp | Ø19.1x0.80 (1/2H) | Ø9.5x0.80 (O) |
| 10 Hp | Ø22.2x0.80 (1/2H) | Ø9.5x0.80 (O) |
| 12~16 Hp | Ø28.6x0.99 (1/2H) | Ø12.7x0.80 (O) |

(a) OD x minimum wall thicknes (temper grade type)

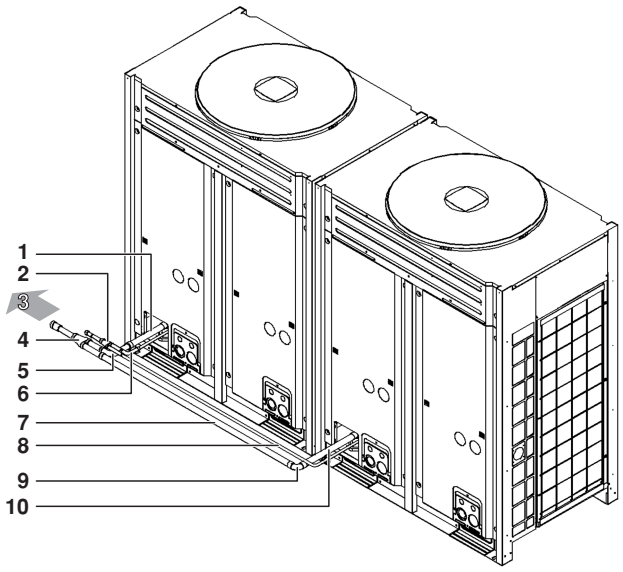
■ Cut the pipe with a pipe cutter.




**1** Joint or reducer
**2** Cut in the center of the connections.
**3** Field pipe

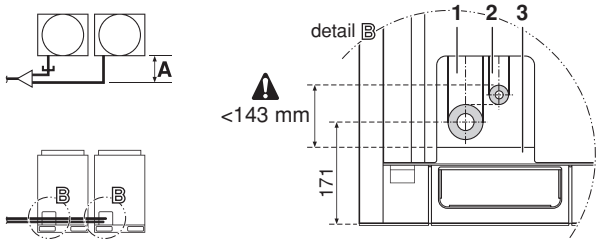
# IN CASE OF FRONT PIPING

## 1. EXTERIOR




**1** Gas pipe 1 (field supply)
**2** Liquid side joint
**3** To indoor unit
**4** Gas side joint
**5** Gas side reducer (1)
**6** Liquid side reducer (1)
**7** Gas pipe (field supply)
**8** Liquid pipe (field supply)
**9** Joint (angle of 90°) (field supply)
**10** Gas pipe 2 (field supply)

## 2. DIMENSIONS FOR INSTALLATION




**A** 290 mm (standard)
**1** Gas pipe
**2** Liquid pipe
**3** Bottom frame

Removing or attaching the front panel becomes impossible when the distance between the bottom frame and the liquid pipe is more than 143 mm.

■ In case dimension A differs from 290 mm, adjust the field supplied interconnection piping between the joint and the outdoor unit.

# 3. INSTALLATION OF GAS AND LIQUID PIPES

### Cutting the field supplied gas pipes

Use the following table in case dimension A is 290 mm.

If dimension A differs from 290 mm, adjust the L dimension of the gas pipes 1 and 2 accordingly.

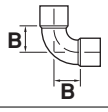
For L dimension of gas pipe 2, dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. If dimension B of the angled joint you use is different from that dimension B, adjust the L dimension of gas pipe 2 accordingly.

**Table 6**

| | Field supplied gas pipes (L (mm)) | | |
|---|---|---|---|
| Outdoor unit | Gas pipe 1 | Gas pipe 2 | |
| 8 Hp | 166 | 379 | |
| 10 Hp | 190 | 367 | |
| 12~16 Hp | 256 | 355 | |



**Table 7**

| | Joint (angle of 90°) (field supply) | |
|---|---|---|
| Outdoor unit | B (mm) | |
| 8 Hp | 17 |  |
| 10 Hp | 23 | |
| 12~16 Hp | 29 | |



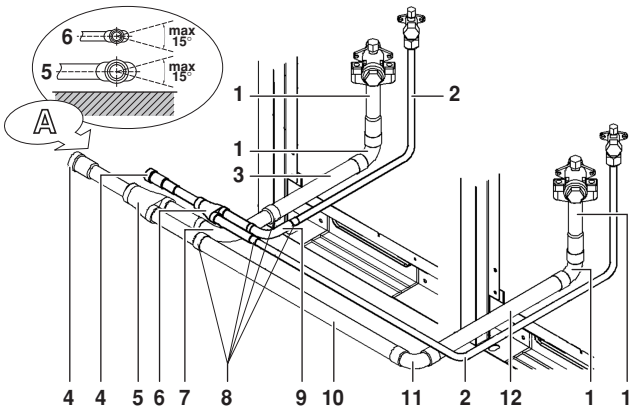
### Connection piping

■ Connect the gas and liquid pipes as shown in the figure below. Before connecting the pipes, first connect the gas side joint and the gas side reducer (1), the liquid side joint and the liquid side reducer (1).

■ See "2. Dimensions for installation" on page 3 for the location (height) of the joint.

■ Refer to the installation manual delivered with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.

■ Keep the joint in a horizontal position. The caution label must be on top (see view A).



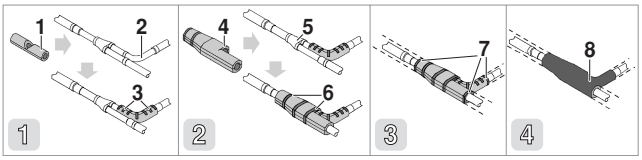

**1** Gas pipe supplied with the outdoor unit
**2** Liquid pipe (field supply)
**3** Gas pipe 1 (field supply) refer to table 6 on page 3
**4** Refer to table "4 Main pipe" on page 2 when cutting
**5** Gas side joint
**6** Liquid side joint
**7** Gas side reducer (1)
**8** Refer to table "5 Pipe between the outdoor unit multi connection piping kit and the outdoor unit" on page 3 when cutting
**9** Liquid side reducer (1)
**10** Gas pipe (field supply) (select the pipe length on site)
**11** Joint (angle of 90°) (field supply) refer to table 7 on page 3
**12** Gas pipe 2 (field supply) refer to table 6 on page 3

# 4. After connection of the piping

### Connection piping between the outdoor and indoor unit

All piping must be executed according to instructions in the installation manual of the outdoor unit and an air tight test must be performed after complete installation of the piping.

### Insulation of joints




**Step 1**: Fit the insulation (1) around the reducer (2) and keep it in place with tape (▬) (3).

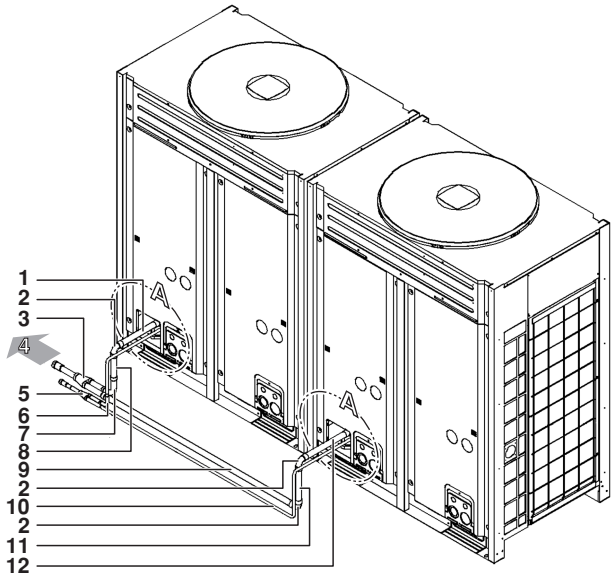
**Step 2**: Fit the insulation (4) around the joint (5) and keep it in place with tape (▬) (6) without leaving a gap between the two insulated parts.

**Step 3**: Seal the seam between the insulation and the field piping insulation (- - -) with tape (▬) (7).

**Step 4**: Cover the insulated parts completely with tape (▬) without leaving any gaps (8).

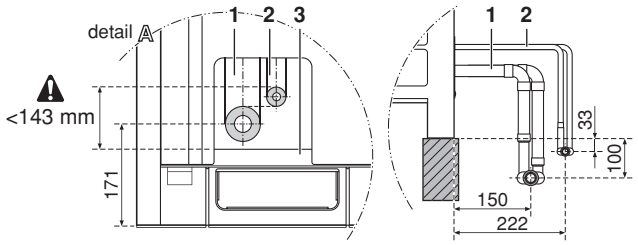
- All required tape is field supply.
- In case of indoor installation, make sure that the tape is of the fireproof type in order to comply with local regulations.

## In case of lower front piping




| | | | |
|---|---|---|---|
| **1** | Gas pipe 1 (field supply) | **7** | Gas side reducer (1) |
| **2** | Joint (angle of 90°) (field supply) | **8** | Gas pipe 3 (field supply) |
| **3** | Gas side joint | **9** | Gas pipe (field supply) |
| **4** | To indoor unit | **10** | Liquid pipe (field supply) |
| **5** | Liquid side joint | **11** | Gas pipe 4 (field supply) |
| **6** | Liquid side reducer (1) | **12** | Gas pipe 2 (field supply) |

Standard installation




| | |
|---|---|
| **1** | Gas pipe |
| **2** | Liquid pipe |
| **3** | Bottom frame |

Removing or attaching the front panel becomes impossible when the distance between the bottom frame and the liquid pipe is more than 143 mm.

**NOTE** When the dimensions differs from these of the standard installation, extend the pipes between the outdoor unit and the joint accordingly (field supply).

# 1. Installation of gas and liquid pipes

### Cutting the field supplied gas pipes 1 to 4

Cut the gas pipes 1 to 4 according to table 8.

For L dimension of gas pipes 1 to 4, dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. If dimension B of the angled joint you use is different from that dimension B, adjust L dimensions of gas pipes 1 to 4 accordingly.

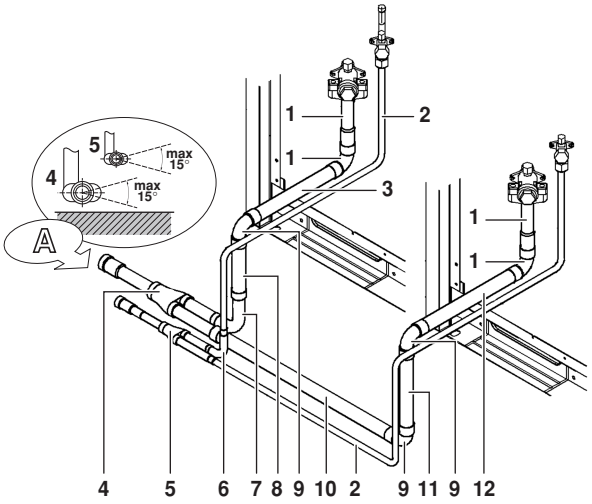
**Table 8**

| Outdoor unit | Field supplied gas pipes (L (mm)) | | | | |
|---|---|---|---|---|---|
| | Gas pipe 1 | Gas pipe 2 | Gas pipe 3 | Gas pipe 4 | |
| 8 Hp | 220 | 255 | 59 | 237 | L |
| 10 Hp | 208 | 243 | 83 | 225 | |
| 12~16 Hp | 196 | 231 | 149 | 213 | |

### Connection piping

- Connect the gas and liquid pipes as shown in the figure below. Before connecting the pipes, first connect the gas side joint and the gas side reducer (1), the liquid side joint and the liquid side reducer (1).
- Refer to the installation manual delivered with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.

■ Keep the joint in a horizontal position, the caution label must be on top (see view Ⓐ).



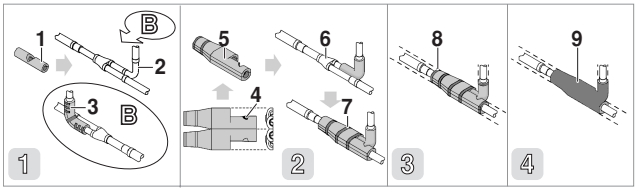

| | |
|---|---|
| **1** | Gas pipe supplied with the outdoor unit |
| **2** | Liquid pipe (field supply) |
| **3** | Gas pipe 1 (field supply) refer to table 8 on page 4 |
| **4** | Gas side joint |
| **5** | Liquid side joint |
| **6** | Liquid side reducer (1) |
| **7** | Gas side reducer (1) |
| **8** | Gas pipe 3 (field supply) refer to table 8 on page 4 |
| **9** | Joint (angle of 90°) (field supply) |
| **10** | Gas pipe (field supply) (select the pipe length on site) |
| **11** | Gas pipe 4 (field supply) refer to table 8 on page 4 |
| **12** | Gas pipe 2 (field supply) refer to table 8 on page 4 |

## 2. AFTER CONNECTION OF THE PIPING

### Connection piping between the outdoor and indoor unit

All piping must be executed according to instructions in the installation manual of the outdoor unit and an air tight test must be performed after complete installation of the piping.

### Insulation of joints




**Step 1**: Fit the insulation (1) around the reducer (2) and keep it in place with tape (▬) (3 on view Ⓑ).

**Step 2**: Cut the insulation (5) along the slit (4). Fit the insulation around the joint (6) and keep it in place with tape (▬) (7) without leaving a gap between the two insulated parts.

**Step 3**: Seal the seam between the insulation and the field piping insulation (– –) with tape (▬) (8).

**Step 4**: Cover the insulated parts completely with tape (▬) without leaving any gaps (9).

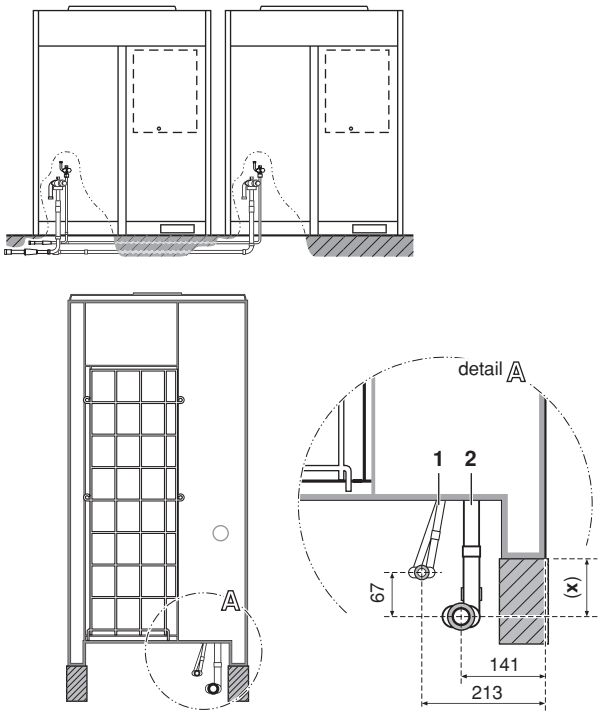
■ All required tape is field supply.

■ In case of indoor installation, make sure that the tape is of the fireproof type in order to comply with local regulations.

## IN CASE OF BOTTOM PIPING

Be sure to foresee enough space for brazing and piping work under the unit.

If a centralized drain pan kit and/or a vibration proof base are used, the dimensions marked with "(**x**)" in the following figure will vary. Refer to the table below to determine the correct length of the field pipes.




| | | | |
|---|---|---|---|
| **1** | Liquid pipe | **(x)** | Distance from the foundation or floor refer to table 9 |
| **2** | Gas pipe | | |

**Table 9**

| | (x) |
|---|---|
| Standard | 100 |
| Central drain pan kit installed | 139 |
| Vibration proof base or<br>vibration proof base + central drain pan kit installed | 233 |

# 1. Installation of gas and liquid pipes

### Cutting the field supplied gas pipes 1 and 2 and the gas side accessory pipe 3

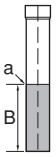
Cut the pipes according to table 10.

For the 12~16 Hp type units, the gas side accesory pipe (3) delivered with the unit will not be used.

For L dimension of gas pipe 1 (8+10 Hp) and of gas pipe 2 (12~16 Hp), dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. Further, connection of gas pipes and the field supplied joints for same diameter are of the type without stoppers. If dimension B of the angled joint you use is different and/or if the the joints for same diameter pipes have stoppers, adjust L dimensions of gas pipes 1 and 2 accordingly.

**Table 10**

■ **For 8+10 Hp**

| | Gas side accessory pipe 3 (delivered with the unit) | | | | Gas pipe 1 (field supply) | | | |
|---|---|---|---|---|---|---|---|---|
| | B (mm) (x) dimension | | | | L (mm) (x) dimension | | | |
| Outdoor unit | 100 | 139 | 233 | | 100 | 139 | 233 | |
| 8 Hp | 76 | 37 | 76 + piping joint + field piping 133 |  | 271 | 310 | 404 | |
| 10 Hp | 34 | 80 + piping joint + field piping 85 | 34 + piping joint + field piping 133 | | | | | |

a = cutting position

■ **For 12~16 Hp**

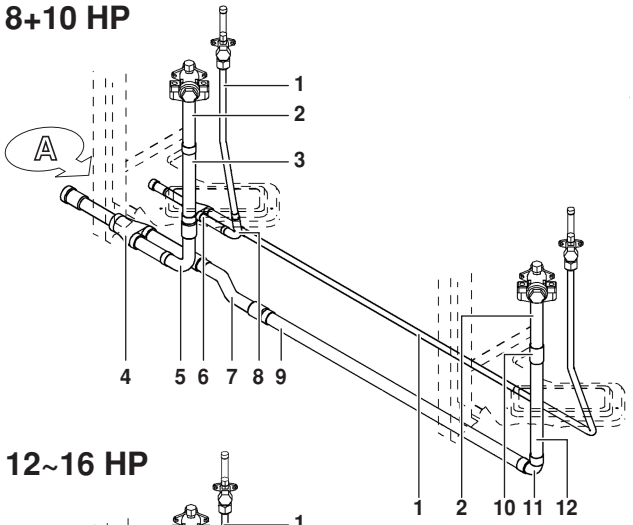
| | Gas pipe 1 (field supply) | | | | Gas pipe 2 (field supply) | | | |
|---|---|---|---|---|---|---|---|---|
| | L (mm) (x) dimension | | | | L (mm) (x) dimension | | | |
| Outdoor unit | 100 | 139 | 233 | | 100 | 139 | 233 | |
| 12~16 Hp | 192 | 231 | 325 | | 271 | 310 | 404 | |

### Connection piping

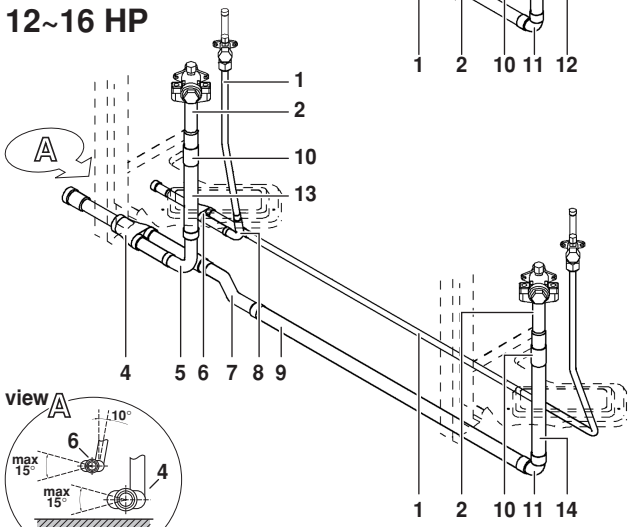
- Remove the knockout plate on the bottom frame. Refer to the installation manual delivered with the outdoor unit.
- Connect the gas and liquid pipes (see figure below).
  Before connecting the pipes, first connect the gas side joint and the gas side reducer (1), the liquid side joint and the liquid side reducer (1).
- Refer to the installation manual delivered with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.
- Keep the joint in a horizontal position, the caution label must be on top (see view 𝔸).
- Connect the liquid side reducer (1) by tilting it ±10° and bend the field supplied liquid pipe up to the stop valve as shown in the figure (see view 𝔸).

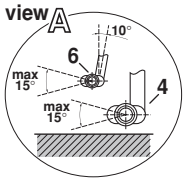
⚠ If the liquid side reducer is connected vertically without bending the liquid pipes, the insulation will not fit.

**8+10 HP**




**12~16 HP**



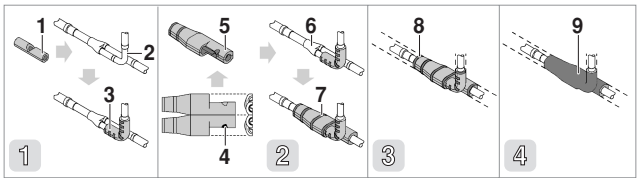

**1** Liquid pipe (field supply)
**2** Gas side accesory pipe (1) (delivered with the outdoor unit)
**3** Gas side accesory pipe (3) (delivered with the outdoor unit) (cut piping according to table 10)
**4** Gas side joint
**5** Gas side reducer (1)
**6** Liquid side joint
**7** Gas side reducer (3)
**8** Liquid side reducer (1)
**9** Gas pipe (field supply) (select the pipe length on site)
**10** Joint for same diameter pipes (field supply)
**11** Joint (angle of 90°) (field supply)
**12** Gas pipe 1 (field supply) refer to table 10, 8+10 Hp
**13** Gas pipe 1 (field supply) refer to table 10, 12~16 Hp
**14** Gas pipe 2 (field supply) refer to table 10, 12~16 Hp

# 2. After connection of the piping

### Connection piping between the outdoor and indoor unit

All piping must be executed according to instructions in the installation manual of the outdoor unit and an air tight test must be performed after complete installation of the piping.

### Insulation of joints




**Step 1**: Fit the insulation (1) around the reducer (2) and keep it in place with tape (▬).

**Step 2**: Cut the insulation (5) along the slit (4). Fit the insulation around the joint (6) and keep it in place with tape (▬) (7) without leaving a gap between the two insulated parts.

**Step 3**: Seal the seam between the insulation and the field piping insulation (- - -) with tape (▬) (8).

**Step 4**: Cover the insulated parts completely with tape (▬) without leaving any gaps (9).

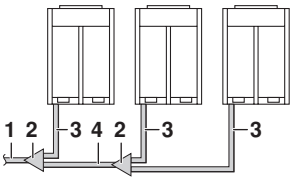
- All required tape is field supply.
- In case of indoor installation, make sure that the tape is of the fireproof type in order to comply with local regulations.

# For CZ-48PJ2PQ

Refer to the installation manual of the outdoor unit for selection and restriction for the piping between outdoor branches. Not observing restrictions on the interconnecting piping may result in malfunctioning of the unit.

**Pipe size selection and cutting position of joints.**

Select the correct pipe size according with the tables below and cut the joints and reducers on the correct places with a pipe cutter.




**1** Main pipe
**2** Outdoor unit multi connection piping kit
**3** Pipe between the outdoor unit multi connection piping kit and the outdoor unit
**4** Connection inbetween connection joints

**Table 11 Main pipe**

- Select the pipe size in function of the total capacity of the outdoor unit.

| Total capacity outdoor units | Pipe size[a] | |
|---|---|---|
| | Gas | Liquid |
| 34 Hp | Ø34.9x1.21 (1/2H) | Ø19.1x0.80 (1/2H) |
| 36~48 Hp | Ø41.3x1.43 (1/2H) | Ø19.1x0.80 (1/2H) |

(a) OD x minimum wall thicknes (temper grade type)

**Table 12 Pipe between the outdoor unit multi connection piping kit and the outdoor unit**

| Outdoor unit | Pipe size[a] | |
|---|---|---|
| | Gas | Liquid |
| 10 Hp | Ø22.2x0.80 (1/2H) | Ø9.5x0.80 (O) |
| 12~16 Hp | Ø28.6x0.99 (1/2H) | Ø12.7x0.80 (O) |

(a) OD x minimum wall thicknes (temper grade type)

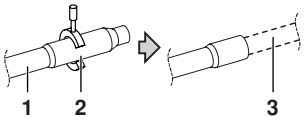
**Table 13 Connection inbetween connection joints**

Select the pipe size in function of the total capacity of the outdoor units to be connected upstream.

| Total capacity of upstream outdoor units | Pipe size[a] | |
|---|---|---|
| | Gas | Liquid |
| ≤22 Hp | Ø28.6x0.99 (1/2H) | Ø15.9x0.99 (O) |
| 24 Hp | Ø34.9x1.21 (1/2H) | Ø15.9x0.99 (O) |
| ≥26 Hp | Ø34.9x1.21 (1/2H) | Ø19.1x0.80 (1/2H) |

(a) OD x minimum wall thicknes (temper grade type)

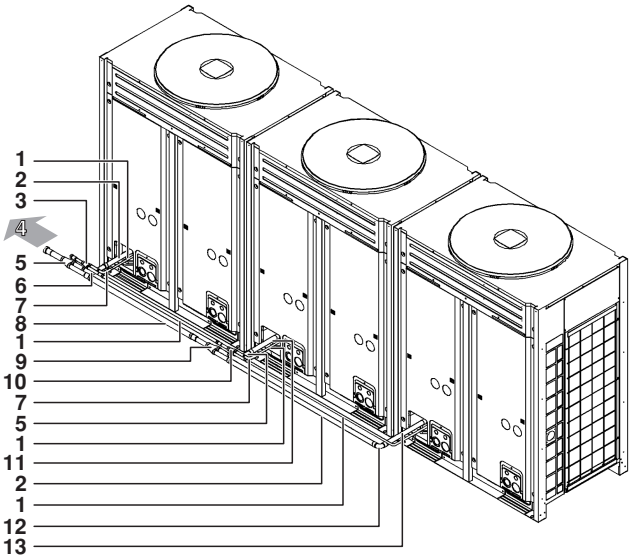
- Cut the pipe with a pipe cutter




**1** Joint or reducer
**2** Cut in the center of the connections.
**3** Field pipe

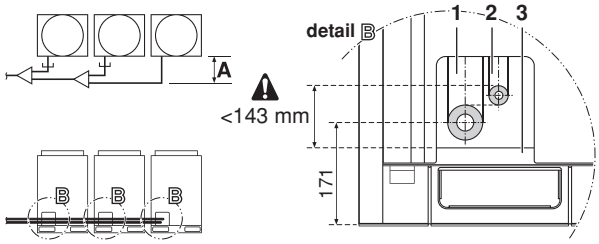
## In case of front piping

## 1. Exterior




**1** Liquid pipe (field supply)
**2** Gas pipe 1 (field supply)
**3** Liquid side joint (1)
**4** To indoor unit
**5** Gas side joint (1)
**6** Gas side reducer (1)
**7** Liquid side reducer (1)
**8** Gas pipe (field supply)
**9** Gas side joint (2)
**10** Liquid side joint (2)
**11** Gas pipe 2 (field supply)
**12** Joint (angle of 90°) (field supply)
**13** Gas pipe 3 (field supply)

## 2. Dimensions for installation




**A** 284 mm (standard)
**1** Gas pipe
**2** Liquid pipe
**3** Bottom frame

Removing or attaching the front panel becomes impossible when the distance between the bottom frame and the liquid pipe is more than 143 mm.

- In case dimension A differs from 284 mm, adjust the field supplied interconnection piping between the joint and the outdoor unit.

## 3. Installation of gas and liquid pipes

### Cutting the field supplied gas pipes

Use the following table in case dimension A is 284 mm.

If dimension A differs from 284 mm, adjust the L dimensions of the gas pipes 1, 2 and 3 accordingly.

For L dimension of gas pipe 3, dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. If dimension B of the angled joint you use is different from that dimension B, adjust the L dimension of gas pipe 3 accordingly.

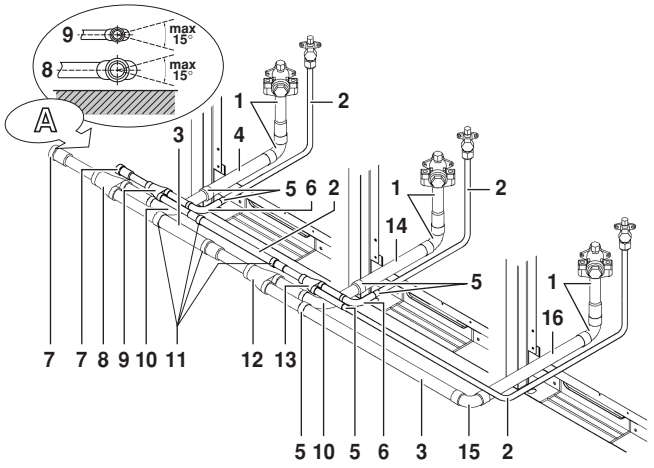
**Table 14**

| Outdoor unit | Field supplied gas pipes (L (mm)) Gas pipe 1 | Gas pipe 2 | Gas pipe 3 | |
|---|---|---|---|---|
| 10 Hp | 166 | 183 | 360 | |
| 12~16 Hp | 232 | 249 | 348 | |



### Connection piping

- Connect the gas and liquid pipes as shown in the figure below. Before connecting the pipes, first connect the gas side joints and the gas side reducers (1), the liquid side joints and the liquid side reducers (1).
- See "2. Dimensions for installation" on page 7 for the location (height) of the joint.
- Refer to table 14 on page 8 for the dimensions of the field supplied gas pipes 1, 2 and 3.
- Refer to the installation manual delivered with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.
- Keep the joint in a horizontal position, the caution label must be on top (see view 𝔸).

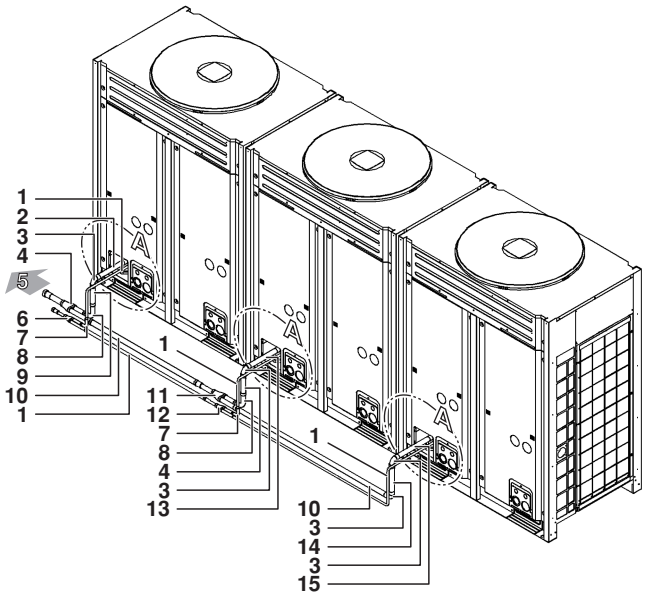



| | | | |
|---|---|---|---|
| **1** | Gas pipe supplied with the outdoor unit | **8** | Gas side joint (1) |
| **2** | Liquid pipe (field supply) | **9** | Liquid side joint (1) |
| **3** | Gas pipe (field supply) (select the pipe length on site) | **10** | Gas side reducer (1) |
| **4** | Gas pipe 1 (field supply) refer to table 14 on page 8 | **11** | Refer to table "13 Connection inbetween connection joints" on page 7 when cutting |
| **5** | Refer to table "12 Pipe between the outdoor unit multi connection piping kit and the outdoor unit" on page 7 when cutting | **12** | Gas side joint (2) |
| **6** | Liquid side reducer (1) | **13** | Liquid side joint (2) |
| **7** | Refer to table "11 Main pipe" on page 7 when cutting | **14** | Gas pipe 2 (field supply) refer to table 14 on page 8 |
| | | **15** | Joint (angle of 90°) (field supply) |
| | | **16** | Gas pipe 3 (field supply) refer to table 14 on page 8 |

## 4. After connection of the piping

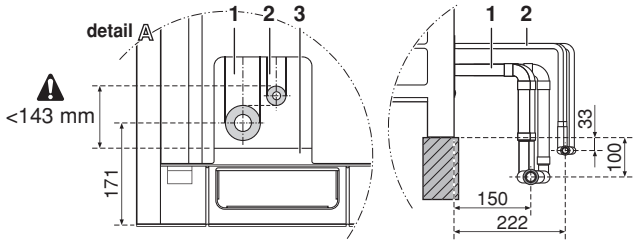
Follow the instructions in the paragraph "4. After connection of the piping" on page 4.

## In case of lower front piping




| | | | |
|---|---|---|---|
| **1** | Liquid pipe (field supply) | **9** | Gas pipe 4 (field supply) |
| **2** | Gas pipe 1 (field supply) | **10** | Gas pipe (field supply) |
| **3** | Joint (angle of 90°) (field supply) | **11** | Gas side joint (2) |
| **4** | Gas side joint (1) | **12** | Liquid side joint (2) |
| **5** | To indoor unit | **13** | Gas pipe 2 (field supply) |
| **6** | Liquid side joint (1) | **14** | Gas pipe 5 (field supply) |
| **7** | Liquid side reducer (1) | **15** | Gas pipe 3 (field supply) |
| **8** | Gas side reducer (1) | | |

Standard installation




| | |
|---|---|
| **1** | Gas pipe |
| **2** | Liquid pipe |
| **3** | Bottom frame |

⚠ Removing or attaching the front panel becomes impossible when the distance between the bottom frame and the liquid pipe is more than 143 mm.

**NOTE** When the dimensions exceed these of the standard installation, extend the pipes between the outdoor unit and the joint accordingly (field supply).

# 1. Installation of gas and liquid pipes

## Cutting the field supplied gas pipes 1 to 5

Cut the pipes 1 to 5 according to table 15.

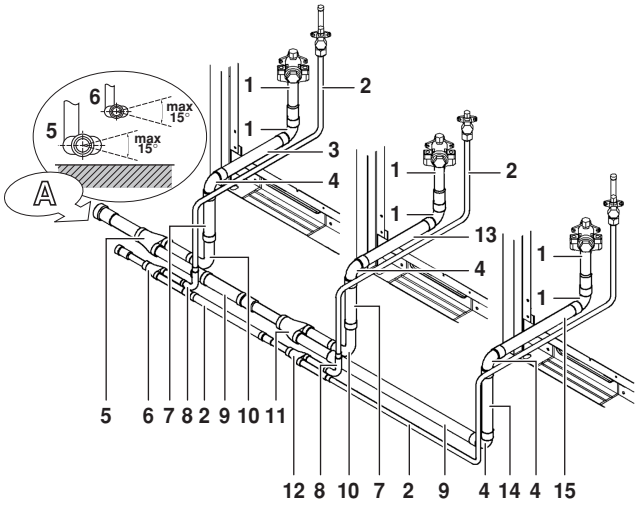
For L dimension of the gas pipes 1 to 5, dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. If dimension B of the angled joints you use is different from that dimension B, adjust L dimensions of gas pipes 1 to 5 accordingly.

**Table 15**

| Outdoor unit | Field supplied gas pipes (L (mm)) | | | | | |
|---|---|---|---|---|---|---|
| | Gas pipe 1 | Gas pipe 2 | Gas pipe 3 | Gas pipe 4 | Gas pipe 5 | |
| 10 Hp | 208 | 225 | 260 | 83 | 225 | L |
| 12~16 Hp | 196 | 213 | 248 | 149 | 213 | |

## Connection piping

- Connect the gas and liquid pipes as shown in the figure below. Before connecting the pipes, first connect the gas side joints and the gas side reducers (1), the liquid side joints and the liquid side reducers (1).
- Refer to the installation manual deliverd with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.
- Keep the joint in a horizontal position, the caution label must be on top (see view 𝔸).




**1** Gas pipe supplied with the outdoor unit
**2** Liquid pipe (field supply)
**3** Gas pipe 1 (field supply) refer to table 15 on page 9
**4** Joint (angle of 90°) (field supply)
**5** Gas side joint (1)
**6** Liquid side joint (1)
**7** Gas pipe 4 (field supply) refer to table 15 on page 9
**8** Liquid side reducer (1)
**9** Gas pipe (field supply) (select the pipe length on site)
**10** Gas side reducer (1)
**11** Gas side joint (2)
**12** Liquid side joint (2)
**13** Gas pipe 2 (field supply) refer to table 15 on page 9
**14** Gas pipe 5 (field supply) refer to table 15 on page 9
**15** Gas pipe 3 (field supply) refer to table 15 on page 9

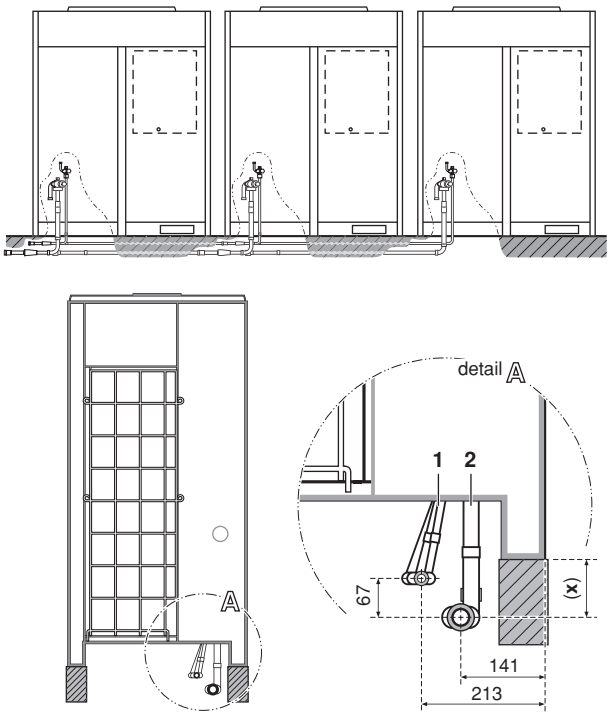
# 2. After connection of the piping

Follow the instructions on "2. After connection of the piping" on page 5.

# In case of bottom piping

⚠ Be sure to foresee enough space for brazing and piping work under the unit.

If a centralized drain pan kit and/or a vibration proof base are used, the dimensions marked with "**(x)**" in the following figure will vary. Refer to the table below to determine the correct length of the field pipes.




**1** Liquid pipe
**2** Gas pipe
**(x)** Distance from the foundation or floor (refer to table 16)

**Table 16**

| | (x) |
|---|---|
| Standard | 100 |
| Central drain pan kit installed | 139 |
| Vibration proof base or vibration proof base + central drain pan kit installed | 233 |

# 1. Installation of gas and liquid pipes

### Cutting the field supplied gas pipes 1 and 2 and the gas side accessory pipe 3

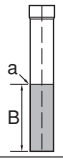
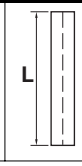
Cut the pipes according to table 17.

For the 12~16 Hp type units, the gas side accessory pipe (3) delivered with the unit will not be used.

For L dimension of gas pipe 1 (10 Hp) and of gas pipe 2 (12~16 Hp), dimension B of the field supplied angled joint as in table 7 on page 3 has been taken into account. Further, connection of gas and field supplied joints for same diameter are of the type without stoppers. If dimension B of the angled joint you use is different and/or if the joints for same diameter pipes have stoppers, adjust L dimensions of gas pipes 1 and 2 accordingly.

**Table 17**

■ **For 10 Hp**

| Gas side accessory pipe 3 (delivered with the unit) | | | | Gas pipe 1 (field supply) | | | |
|---|---|---|---|---|---|---|---|
| B (mm) (x) dimension | | | | L(mm) (x) dimension | | | |
| 100 | 139 | 233 | | 100 | 139 | 233 | |
| 34 | 80 + piping joint + field piping 85 | 34 + piping joint + field piping 133 |  | 271 | 310 | 404 |  |

a = cutting position

■ **For 12~16 Hp**

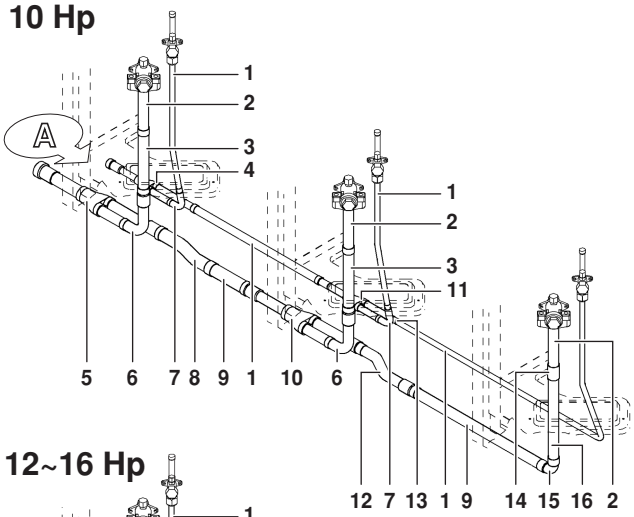
| Gas pipe 1 (field supply) | | | | Gas pipe 2 (field supply) | | | |
|---|---|---|---|---|---|---|---|
| L (mm) (x) dimension | | | | L(mm) (x) dimension | | | |
| 100 | 139 | 233 | | 100 | 139 | 233 | |
| 192 | 231 | 325 | | 271 | 310 | 404 | |

### Connection piping

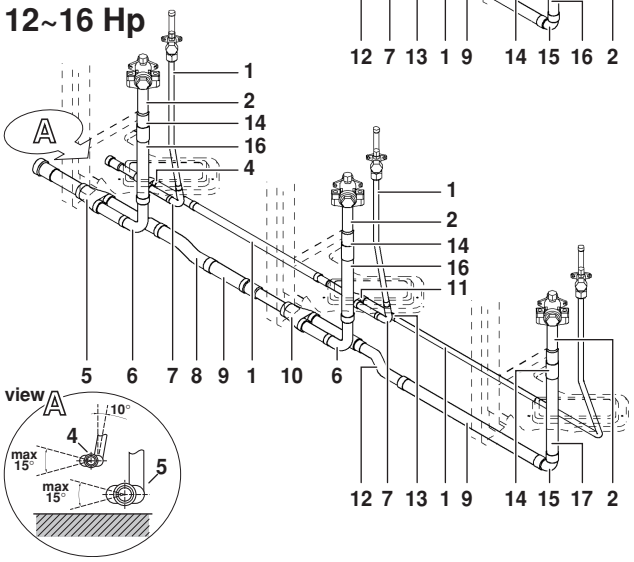
- Remove the knockout plate on the bottom frame. Refer to the installation manual delivered with the outdoor unit.
- Connect the gas and liquid pipes as shown in the figure below. Before connecting the pipes, first connect the gas side joints and the gas side reducers (1), the liquid side joints and the liquid side reducers (1).
- Refer to the installation manual deliverd with the outdoor unit for cautions on brazing pipes and for connecting pipes with flare nuts.
- Keep the joint in a horizontal position, the caution label must be on top (see view 𝔸).
- Connect the liquid side reducer (1) by tilting it ±10° and bend the field supplied liquid pipe up to the stop valve as shown in the figure (see view 𝔸).

⚠ If the liquid side reducer is connected vertically without bending the liquid pipes, the insulation will not fit.

**10 Hp**




**12~16 Hp**







| | | | |
|---|---|---|---|
| **1** | Liquid pipe (field supply) | **10** | Gas side joint (2) |
| **2** | Gas side accessory pipe (1) delivered with the outdoor unit | **11** | Liquid side joint (2) |
| | | **12** | Gas side reducer (3) |
| **3** | Gas side accessory pipe (3) delivered with the outdoor unit (cut piping according to table 17) | **13** | Liquid side reducer (2) |
| | | **14** | Joint for same diameter pipes (field supply) |
| **4** | Liquid side joint (1) | **15** | Joint (angle 90°) (field supply) |
| **5** | Gas side joint (1) | **16** | Gas pipe 1 (cut piping according to table 17) |
| **6** | Gas side reducer (1) | | |
| **7** | Liquid side reducer (1) | **17** | Gas pipe 2 (cut piping according to table 17) |
| **8** | Gas side reducer (4) | | |
| **9** | Gas pipe (field supply) (select the pipe length on site) | | |

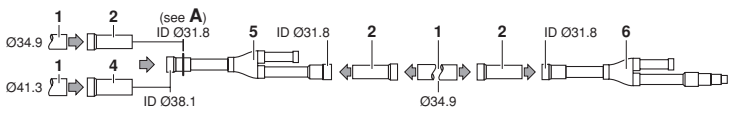
# 2. After connection of the piping

Follow the instructions on "2. After connection of the piping" on page 6.

**NOTE** In case your installation requires gas field piping of Ø34.9 or Ø41.3 in function of the total capacity of the outdoor units, proceed as follows for installation of additional gas pipe reducers (7) + (8).

### CZ-32PJ2PQ

### CZ-48PJ2PQ




| | |
|---|---|
| **1** | Field piping |
| **2** | Gas side reducer (7) |
| **3** | Gas side joint |
| **4** | Gas side reducer (8) |
| **5** | Gas side joint (1) |
| **6** | Gas side joint (2) |
| **A** | Cut at the center of the connection with a pipe cutter |